AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method ~~for creating~~ comprising using a computer to create a product definition, the product definition describing a collection of components for multiple possible configurations of a product, the product definition also providing details as to how the components are defined, developed, and manufactured, wherein creating the product definition includes: ~~comprising:~~

~~instancing~~ creating instancings of one or more usage-based product definition inputs, the inputs including component descriptions and engineering requirement callouts for the different configurations;

assessing ~~at least one~~ applicability expressions, ~~expression including at least one of an~~ engineering ~~requirement~~ requirements, and [[a]] manufacturing availability to determine which instancings are available and valid for the different configurations; ~~associated with at least some of the usage-based product definition inputs;~~ and

generating the product definition based on all instancings that are valid and available. ~~at least one assessed applicability expression.~~

2-3. (Cancelled)

4. (Currently amended) The method of claim 1, wherein instancing one or more usage-based product definition inputs includes transforming a coordinate system of a [[part]] component from a ~~part-centered~~ component-centered coordinate system to a product-centered coordinate system.

5. (Original) The method of claim 1, wherein instancing one or more usage-based product definition inputs includes instancing a sub-component having a first configuration, and instancing the sub-component a second time having a second configuration.

6. (Original) The method of claim 1, wherein instancing one or more usage-based product definition inputs includes instancing a predetermined component based on a product class configuration rule.

7. (Original) The method of claim 6, wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a mandatory configuration rule.

8. (Original) The method of claim 6, wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a configuration default rule.

9. (Previously presented) The method of claim 1, wherein assessing an applicability expression includes assessing an option expression.

10. (Original) The method of claim 9, wherein assessing an option expression includes assessing at least one of a default option expression, an available option expression, and a not available option expression.

11. (Original) The method of claim 9, wherein assessing an option expression includes assessing an option from an option category associated to a product.

12. (Original) The method of claim 9, wherein assessing an option expression includes assessing at least one of a mandatory option or a mutually exclusive option.

13. (Previously presented) The method of claim 1, wherein assessing an applicability expression includes assessing a configuration rule, the configuration rule being adapted to at least one of validate a configuration specification and populate a configuration specification.

14. (Original) The method of claim 1, wherein instancing one or more usage-based product definition inputs includes instancing a public instance representation of a lower level product by a higher level product.

15. (Original) The method of claim 14, wherein instancing a public instance representation of a lower level product by a higher level product includes filtering the public instance representation through the instance of the higher-level product.

16. (Original) The method of claim 1, wherein instancing one or more usage-based product definition inputs includes instancing in accordance with a configuration at location option by a customer.

17. (Original) The method of claim 1, wherein at least one of instancing one or more usage-based product definition inputs includes instancing in accordance with a unitized manufacturing assembly plan.

18. (Previously presented) The method of claim 1, wherein assessing an applicability expression includes assessing in accordance with a unitized manufacturing assembly plan.

Claims 19-20 (Cancelled)

21. (Currently amended) A method comprising using a computer to create ~~for creating~~ an air vehicle definition that describes a collection of components for different possible configurations of an air vehicle and also details as to how the components are defined, developed, and manufactured, wherein creating the air vehicle definition includes: ~~comprising:~~

instancing a usage-based fuselage definition input, the usage-based fuselage definition input including at least one of a fore body definition input, a mid body definition input, an aft body definition input, a wing definition input, a vertical tail definition input, and a horizontal tail definition input;

instancing a usage-based propulsion system definition input;

assessing ~~at least one of~~ an applicability expression, an engineering requirement, and a manufacturing availability expression associated with at least some of the definition inputs; and

generating the air vehicle definition based on ~~at least some of~~ the definition inputs, applicability expressions, engineering requirements, and manufacturing availabilities.

22. (Original) The method of claim 21, wherein instancing at least some of the definition inputs includes transforming a coordinate system of a component from a component-centered coordinate system to an air vehicle-centered coordinate system.

23. (Original) The method of claim 21, wherein instancing at least some of the definition inputs includes instancing a predetermined component based on a product class configuration rule.

24. (Original) The method of claim 23, wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a mandatory configuration rule.

25. (Original) The method of claim 23, wherein the instancing a predetermined component based on a product class configuration rule includes instancing a predetermined component based on a configuration default rule.

26. (Original) The method of claim 21, wherein assessing at least one of an applicability expression, an engineering requirement, and a manufacturing availability expression includes assessing at least one of a default option expression, an available option expression, and a not available option expression.

27. (Original) The method of claim 21, wherein assessing at least one of an applicability expression, an engineering requirement, and a manufacturing availability expression includes assessing a configuration rule, the configuration rule being adapted to at least one of validate a configuration specification and populate a configuration specification.

28. (Original) The method of claim 21, wherein instancing at least one of the definition inputs includes instancing a public instance representation of a lower level product by a higher level product.

29. (Original) The method of claim 28, wherein instancing a public instance representation of a lower level product by a higher level product includes filtering the public instance representation through the instance of the higher-level product.

30. (Original) The method of claim 21, wherein at least one of instancing the definition inputs and assessing at least one of an applicability expression, an engineering requirement, and a manufacturing availability expression includes at least one of instancing and assessing in accordance with a unitized manufacturing assembly plan.

31. (Withdrawn-currently amended) The method of claim 1, wherein at least one applicability ~~A method comprising using a computer to:~~

~~generate a plurality of component definition expressions, each component definition~~ expression includes an option operand, ~~including a range of products,~~ a mathematical operator, and a serial range of available configurations for [[that]] a component. [[; and]]

~~generate a product definition expression including at least one of the component definition expressions, a mathematical operator, and a specific configuration, the specific configuration limiting the range of configurations in the component definition expressions.~~

32. (Withdrawn-) The method of claim 31, wherein each mathematical operator is a Boolean operator.